

AMERICAN
VETERINARY REVIEW.

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AMERICAN VETERINARY REVIEW,

NOVEMBER, 1878.

ORIGINAL ARTICLES.

PLEURO-PNEUMONIA ERYSIPELATODES.

AS AN OBJECT FOR THE VETERINARY AND SANITARY POLICE.

BY DR. HERMAN PUTZ OF HALLE, GERMANY.

Translated from the German "Vortrage fur Thierarzte," by F. S. B.

The time is come, says Prof. Putz, when the veterinarian must change the character of a non-participating medical empiriker for that of an earnest, combative interest in medical science, and in the progress of that part to which he himself belongs, in order that hygienic and police regulations conformable to the times may be made and executed by men possessing the absolutely necessary technical comprehension of their duties; and a true aggressive, and scientific veterinary medicine find its development and appreciation among the people.

The restriction and suppression of "Lungenseuche" is one of the more important questions, occupying the attention of those interested in the agricultural welfare of a nation at the present time; it is also a question which belongs exclusively to the veterinarian and the agriculturist to solve, and only by their united endeavors can the problem be satisfactorily studied. The essential properties of this disease from our point of view are:

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1. The long period of incubation, extending from three weeks to as many months or longer, the same being afebril and enabling the disease to be present among cattle for a long time without exciting any suspicion of the same, and much less its recognition. This secret invasion of the disease is all the more possible, as by a mild course and insignificant local affection, the recovery of the complicated organism is by no means seldom, without the disease having at all assumed the feverish or apparent stadium by which it would be recognized.

2. The chronic course of the disease being the rule which, in some cases with inclusion of the reconvalescence, may extend over six months, a year, and in extreme cases longer. Further, the circumstance that such an animal is, during the entire period, a centrum from which contagium is constantly emanating:—these are the *peculiarities* which render the *stamping out* of this disease a task of no inconsiderable difficulty. We find trustworthy communications in veterinary literature, which report the infection of healthy animals by such, by which a year or even fifteen months had elapsed since their apparent disease, or even after apparently complete recovery.

3. If we take also the transportability of the elements of infection into consideration, which favors the direct conveyance of the disease from individual to individual, as also the possibility of infection by indirect ways, the question becomes still more complicated.

It is self-evident that the stamping out of a disease having these peculiar characteristics is bound with many difficulties. It is also as self-evident that we shall be able to attain this much to-be-desired end when regulations corresponding to these peculiarities come into active and intelligent execution; as we can safely assert that the disease at the present day owes its origin entirely to the distribution of its infectious elements from an already complicated organism and does not develop abiogenetically. As the newly drafted Prussian laws pass silently over the fact that the continued introduction of fresh animals into stables infested with this disease, thereby continually supplying new food for the same, so the disease may continue ad infinitum. If we cannot entirely

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restrict such introduction of fresh and undiseased cattle into infested stables, yet the laws must be so made and executed that the same may be restricted into the narrowest possible limits. This would probably be most effectually attained by the State refusing to allow any reimbursements for such introduced animals whether perishing from the natural course of the disease, or if killed by the veterinary police in the execution of the law, whether found diseased or not. It is not difficult to decide what means or regulations are scientifically indicated for the suppression of this disease. The immediate destruction of all infected droves and thorough cleaning and disinfection of all their surroundings, is the only safe and radical means which offers itself to our consideration; by this means, and this alone, can we have any hope of destroying the unknown infectious elements by which the disease is sustained and extended. The very excellent conditions existing in Switzerland demonstrate most effectually how valuable for the other continental States is the obligatory and exact execution of regulations of this kind. One hundred years' experience in the canton of Bern, very rich in cattle, has so emphatically proven the trustworthiness of the above assertion, that in the new laws for the Swiss confederation the same is made obligatory for all. Art. 24 of the "Laws and Regulations against Animal Pests" (1872) contains the following words: "*No cattle which have been diseased by pleuro-pneumonia can on any account again become an article of transport.*"

"When this disease presents itself in any district, not only the diseased but other cattle in the same stable or drove or grazing upon the same land, must be unconditionally killed. Only by special permission of, and under the most stringent control of the veterinary police authorities may treatment be allowed. Animals which have been diseased and withstood the same, and are apparently healed, may be at once slaughtered, but cannot become an article of transport."

The most stringent regulations must exist against adjoining lands where the treatment of the disease is allowed, and where such animals are again permitted to become an article of transport on apparent recovery.

According to No. 43 of the Prussian "Instructions for the Execution of the Laws in reference to Animal Pests," it is permitted that animals may again become objects of transport from a given stable after the lapse of six months from the last case of disease. Every person who has had experience in this disease knows that such animals frequently give occasion to the further extension of the disease: this fact is known not only to veterinarians of experience, but to many breeders and cattle handlers as well. If we will attain control over this disease in a reasonable period, all animals which are not destined for immediate slaughter within the limits of the infested or previously infested grounds, must be restricted from all intercourse with others, or transport, if not during life at least for a period of not less than *one year and a-half* from the time the last case of disease had disappeared from the point in question; the slaughtering of such animals should only be allowed under definite restrictions and official inspection.

Experience in Switzerland has proven this to be by far the cheapest manner to treat this disease. The remuneration which has been paid to cattle owners in the canton of Bern, for the fifteen years from 1859 to 1874, for the obligatory slaughtering of cattle for the purpose of stamping out this disease, according to official reports, amounts to but 54,600 francs. If all the adjoining lands had such laws, and as well executed, as the pest-surrounded Switzerland, the governmental remuneration for cattle peremptorily slaughtered for this disease in this State, as well as those surrounding it, would soon sink to null. To obtain this much-to-be-desired point, must be the end of our united endeavors.

It is self-evident, that the exact execution of such laws would at first be bound with many and variable difficulties, as well as great expense, in different lands or provinces; however, we do not think a large capital could be better invested. Even in Switzerland, the exact execution of the laws in question meets opposition and difficulty; but these are always overcome, not only without disadvantage to the individual owner, but to the essential welfare of the State and its different departments. It is for those interested in the discussion of the best means for

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stamping out this disease, ever to remember that the time will never come when the same can be done without the sacrifice not only of much human energy, but of money also. They should also remember that great parsimony in one direction, is generally followed by equally great extravagance in another. It is self-evident, that the period fixed for the introduction of such radical measures, should be carefully adapted to the agricultural and economical interests of the districts in question and the individual owners. This would seem possible, by restricting the earliest possible period at which a once diseased animal could be slaughtered, to one and one-half years from the time it had apparently become free from the disease.

So long as we are unable to bring to bear means which are capable of thoroughly stamping out this disease, must we do our utmost in other ways to shorten its course and render the same milder. Inoculation has been for a long time looked upon as such a means, without authorities, however, coming to any united opinion over the exact value of the same. It has been, indeed, asserted that this pest can be stamped out and its course shortened by the exact restriction of all intercourse between healthy and diseased animals, at a much less cost than by inoculation. Is such a method capable of execution? How can we recognize the disease in its latent stadium, during which the complicated organism is capable of causing infection, although in a less intense degree than in the fever stadium. *All individuals by which this disease is present, even in the afebrile stadium, are capable of infecting their non-diseased companions, for a long period before they themselves are looked upon as diseased*; therefore, the early establishment of immunity against natural infection is much more safe and effective than the isolation of the diseased from the healthy animals. Such an isolation is, in many cases, impossible on account of insufficiency of room. Aside from this, we have, thankfully—in Germany—so far progressed in the treatment of this disease, that all manifestly diseased animals are at once killed, and I hope that in the new laws with reference to the animal pests, which are in process of being drafted for the entire German empire, a way will be prepared for the immediate

killing of all the animals of small herds in which the disease has freshly broken out in a district which had previously been free from the same. In large industrial establishments, where cattle are kept, it is possible that the exact execution of such a regulation would be met with economical considerations of such import to the agricultural condition of the district, as to render the same unjustifiable. THEREFORE, IT IS SO MUCH THE MORE OUR DUTY TO TEST IN THE MOST EXACT MANNER THE VALUE OF INOCULATION.

Wellenbergh, director of the Veterinary School at Utrecht in 1852, says: "Shall it really result that the receptivity for the infectious stuff of pleuro-pneumonia can be rendered null by means of inoculation, for which some authors contend, but which can only be conceded when the animals are again exposed to infection after the inoculation and its results have entirely disappeared, then we must look upon this discovery as one of the most important in the interest of veterinary science."

Since then inoculation with reference to pleuro-pneumonia has been practised in many lands, and found many enthusiastic defenders among veterinarians and agriculturists. In the 3d report of the Holland Commission—1855—consisting of the Instruction Collegium of the Utrecht School—Wellenbergh, Jennes, Heckmeyer, Van Laer, Witt, and Hengeneld, it is said that the inoculation of Willems, correspondingly and circumspectly employed, has no equal in veterinary medicine. Opposition to inoculation is not wanting, however, but mostly from persons wanting in actual experience in the inoculation question. In Saxony, where the disease has constantly prevailed for a succession of years, all cattle owners who have become acquainted with inoculation through actual experience, are almost unanimously of the opinion that the same is capable of rendering good service in reference to shortening the course of, or the stamping out of, pleuro-pneumonia, if timely resorted to and executed in a conformable manner. In my opinion, it would be a great error to pass over with silence or neglect the experience of *enlightened* owners or breeders. Herr Rimpau, a very intelligent and experienced agriculturist, read an extensive paper with regard to this question, from which I make the following quotations (found in full in Zeitschrift

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fur Wissenschaftlich, Landwirthschaft—Sachsen, 1877): "It is a peculiar phenomenon, that the question of the value of pleuro-pneumonia inoculation cannot yet be considered as scientifically settled, although the same has been the subject of active and repeated discussions at the meetings of veterinarians and agriculturists. In the greater part of the sugar, starch, and spirit factories of Saxony, where great numbers of cattle are kept, and where the disease in question appears nearly every year, the owners are so completely convinced of the prophylactic power of inoculation, that they either subject all newly-introduced animals to the so-called 'protective inoculation,' or at least subject all their animals to inoculation (peremptory inoculation) on the breaking out of the disease. At the meeting of the Central Union Saxon Agriculturists, at Neuholdensleben, in the summer of 1877, this question was discussed, and not a single agriculturist was found to support the doubts of several veterinarians present against the protective power of timely and properly executed inoculation."

On the contrary, it is the opinion of the majority of the veterinary authorities—and among the same men of scientific repute—that the material at present before us is insufficient to prove either the absolute or relative protective power of inoculation, and, further, that the opinion of the majority of Saxon agriculturists, as well as some veterinarians, that the inoculation exerts an absolute prophylactic influence, is a mistaken one, and that the disease takes the same course with or without inoculation.

It is to be remarked that it is especially Saxon veterinarians, who have in reality had the most practical acquaintance with this question—among Germans—who have had the best opportunity to gather statistics, that we find inoculation strongly in favor, while the majority of those opposing the same have lacked such opportunities to study the disease and this assumed prophylacticum. Rimpau finds his views strengthened by the observation and experiments of Kreisthierarzt Ziegenbein, and remarks upon the same: "When a veterinarian can bring together such a number of well authenticated cases speaking for the value of inoculation, and compares with the same the average loss which

he has himself observed where inoculation has not been resorted to, I think he has every cause to be highly in favor of the same."

At a meeting of the Central Veterinary Union of Saxony, a very trustworthy veterinary authority says: "That after careful observation, he was ready to affirm *that inoculation was not only strongly justified, in regard to the combatting of this disease, but it is also the duty of every man to do his best to see it executed.*"

Rimpau says further: "We must also emphasize, that the friends of inoculation among the veterinarians do not by any means assert that the same is an unconditional means of protection for the inoculated animal against infection from 'Pleuropneumonia erysipelatodis.' So far as my knowledge extends, all concede that protection first begins when the action of the inoculation has begun; *i.e.*, the phenomena necessary to the same have become apparent at inoculation's point, and when the animal has not in the intervening time become the subject of the disease, let the latter be apparent or not." According to this view then, those cases of disease which come to pass by inoculated animals within from four to six weeks from time of inoculation, cannot be looked upon as proof against the protective power of inoculation; they are much more to be looked upon as indicatory of the untimely recognition of the pest which had already gained considerable extension in the herd at the time of the inoculation, or that the contagion has affected many animals concomitantly. Further, most "Impfärzte," (inoculators), concede that cases come to pass where inoculated animals become subjected to the natural disease several months after the same has taken place, and that in all cases the inoculation does not provide absolute protection, although the phenomena necessary to the action of the same have been apparent; on the other hand, they assert that such cases are exceedingly scarce, and that inoculation may always be considered as offering an important degree of protection against the natural disease. Rimpau also gives expression to very justifiable doubts with regard to the trustworthiness of the statistics and statement to be found in this regard in the "Mittheilungen aus der thierärztlichen Praxis im preussischen Staate," the same being inexact: In order that such should be trustworthy it is necessary that

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the following conditions should be, in each individual case, given with the greatest exactness: the exact number of cattle present in each stable or drove; the exact number inoculated; the exact number of animals by which inoculation's reaction has been observed; the exact time which has elapsed between the diagnosis of the pest and the inoculation; remarks whether the veterinarian had anticipatory suspicions of the presence of the disease among the cattle in question; how, when and where the lymph for the inoculation was procured, and how the same was treated or preserved until used, the instruments used, and the locality at which each animal was inoculated; the number of animals and distinguishing characteristics of the same, by which inoculation's reaction was apparent; the loss directly resulting from inoculation; the number diseased, and number of cases ending lethally by the natural disease after the inoculation, with the time which has elapsed in each case since the latter had taken place." (I recommend the careful consideration of the above conditions to my American colleagues.—TRANSLATOR.)

Prof. Pütz remarked that Herr Rimpau, who, by the way is one of the largest and best educated and observing cattle breeders in Saxony, is incorrect when he thinks the majority of Saxon veterinarians hold opposite views to himself with regard to the value of inoculation. The veterinary literature of the last ten years is rich in communications, the majority of which speak for the protective power of inoculation. The meeting of the Central Veterinary Union, for Saxony, Thuring and Anhalt, held in Halle, March 20th, '78, discussed this question very earnestly, and emphatically coincided with the views of Rimpau and other agriculturists. With a majority of 50 to 6 it was asserted that:

"*Inoculation*, according to our present experience, offers protection against the natural disease."

Negatived, "that the inoculation exerted any influence upon animals previously diseased with the natural disease." Also, "that the artificial disease exerted any influence in the extension of the pest."

Affirmed further, "that the inoculated disease caused much less sacrifice of property than the natural one."

ACUTE INFLAMMATION OF THE AIR PASSAGES AND PULMONARY EMPHYSEMA,

ARISING FROM THE INHALATION OF VEGETABLE SMOKE.

BY J. MYERS, JR., D.V.S.

In consideration of the numerical and exhausting treatises and discussions of pathological processes, regarding the respiratory organs, found in text books and periodicals, it would almost seem unwarranted to infringe upon the sphere of your organ, as well as the time of its readers. But by reason of some marked differential characteristic phenomena, which existed throughout the course of the following described cases, as compared with the ordinary class of pulmonary afflictions, I feel as though I might communicate some interesting circumstances by forwarding this report.

Nov. 28th, 1877, at 2 P. M., I was requested to go to E. Walnut Hills, a suburban district, about three miles from the city, to render the necessary assistance toward restoring health to three horses, which presented symptoms of a severe pulmonary affliction, contracted by the inhalation of smoke that had been generated by the burning of a haystack stored in the basement of the stable. This department also served the purpose of a cow stable, harboring three head of cattle, which had been suffocated by the inhalation of said smoke.

On my arrival, I found the three equine patients in a good hygienic condition, quartered in a well adapted architectural structure, which was very strongly impregnated with the disagreeable odor of burnt hay. The horses presented a very anxious upheaded appearance, audible respiration, their mouths filled with a foamy saliva and a thin yellowish discharge from the nostrils, with a frequent rough dry cough, very characteristic of the inauguration scene of the epizootic influenza. Although the symp-

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tomatic appearances in all three patients were quite analagous during their course, they differed somewhat in intensity and peculiarity, which compels me to quote each case in a brief manner separately.

Tom, horse, was about 9 years old, rather plethoric. On the first day pulse 70; respiration numbering 40 per minute, of a noisy character; temperature 102° ; expirium damp and warm; conjunctiva congested; schneiderian membrane of a scarlet hue; discharge from the nostrils yellowish, clotty and foamy; the mouth filled with a viscid saliva; peripheric temperature, particularly that of the extremities, lowered. I will here state, that percussion, throughout the whole course of the disease, in all three patients, appeared less remarkable than in the usual pulmonary difficulties, though the general alteration tended toward an exaggerated vesicular resonance. Auscultation revealed the presence of sibilant and sonorous rales. The movement of the nostrils and abdominal muscles were of the greatest intensity.

29th.—Pulse, 66; respiration, 34; temperature, 101° ; physical signs not quite so distinct; the passage of air through the nostrils not near as audible as on the 28th; schneiderian membrane less injected; epithelium around the margin of the nostrils began to peel off; expirium cooler; appetite delicate; desire for water limited. Considerable debility was already displayed.

30th.—Pulse, 66; respiration, 28; temperature, 101° ; the audible respiration subsided to some extent; the discharge turned white and grew less; schneiderian membrane not quite so florid; desire for food and water very moderate.

Dec. 1st.—Pulse, 60; respiration, 24, emphysematic and slightly audible; temperature, 102° ; the dilation of the nostrils and the elevation and the dropping of the flanks became more noticeable as the laryngeal symptoms subsided; nasal discharge assumed more of a catarrhal aspect; cough rough, with evidence of pain. On auscultation, the respiratory murmur over the upper half of the lungs was of a sibilant and sonorous type, the lower portion disclosing a broncho-vesicular breathing. Appetite improved; the gait became more firm, and he lay down at night.

These pathognomonic symptoms appeared more or less marked until about the 8th or 9th of December, when the functions of the general system became more normal, so that by the 15th I was able to discharge him.

Dick, horse, 15 years old. Nov. 28th.—Pulse, 80; respiration, 40; temperature $104\frac{1}{2}^{\circ}$; air passed through the nose quite forcibly; schneiderian membrane of a scarlet hue; a white, foamy discharge escaped from nose and mouth; auscultation revealed the presence of sibilant and sonorous rales; cough very painful and of a high pitch; the active flank movement and distension of the alæ of the nose were extraordinary; conjunctiva injected.

Nov. 29th.—Pulse, 60; respiration, 40, emphysematic; temperature 102° ; refused all nourishment; no discharge from either mouth or nose; fecal matter dry and coated with mucus.

Dec. 1st.—The laborious breathing, dilated nostrils and elevated head, would make it appear as though a severe case of pulmonary emphysema was before the observer, but the highly inflamed schneiderian membrane, accelerated pulse, numbering 70, loss of appetite, hoarse cough, broncho-vesicular breathing about the superior portion of the lungs and mucous rales at the lower portions, would not substantiate such a diagnosis.

From this patient I removed three pints of blood from the jugular vein, which was strongly impregnated with the odor of smoke, and charged with considerable carbonaceous material.

Dec. 3d.—Pulse, 70; respiration, 20, of a like character as on the 1st; temperature, 101° . A walk of one hundred yards was all he could accomplish, for want of breathing capacity. A considerable quantity of purulent mucus could be found about the manger and the fore part of the stall.

Dec. 5th.—Pulse, 68; respiration, 17; temperature, 101° . During inspiration, the left lung conveyed a moist bronchial rale, and on expiration, a sonorous rale would be discovered. Cough at times was very harsh, and at other occasions suppressed; extremities nearly always cold; appetite insignificant; feces costive.

Dec. 8th.—Pulse, 60; respiration, 10; temperature, 102° ;

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subcrepitant and sonorous rales are heard over various portions of both lungs; a desire for food was manifested. The animal lay down and was able to endure a fifteen minutes' exercise.

Dec. 13th.—Pulse, 60; respiration, 10; temperature, $101\frac{3}{4}^{\circ}$. Function of the lungs approached a more normal condition, notwithstanding an attack of dyspnoea that he experienced the day before, which was induced by an excess of exercise, but proved to be only temporary. This dyspnoea was followed by violent coughing spells, causing a copious expulsion of mucus that had been lodged within the bronchi, which afforded great relief. Repetitions of such similar symptoms presented themselves at irregular intervals, until finally the normal condition of the lungs was restored, which took place about the fourth week of his illness.

Bill, horse, 6 years old. Nov. 28.—Pulse, 90, faint; respiration, 66, and quite audible; temperature, $103\frac{1}{4}^{\circ}$; nose and lips covered with frothy sputum; schneiderian membrane of a scarlet hue; expirium moist and warm; no cough; an abundance of sibilant and sonorous rales present on both sides.

Nov. 29th.—Pulse, 76; respiration, 48; temperature $102\frac{3}{4}^{\circ}$; cough rough, dry and distressing; physical signs about the same as on the previous day.

Nov. 30th.—Pulse, 72; respiration, 36; temperature, $103\frac{3}{4}^{\circ}$; no discharge from mouth or nose; cough infrequent and suppressed; extremities cold; entire loss of appetite.

Dec. 1.—Pulse, 66; respiration, 18; temperature, $102\frac{3}{4}^{\circ}$.

Dec. 3d.—Pulse, 96; respiration, 36, and as audible as at the outset; temperature, 103; nasal discharge quite foamy; schneiderian membrane of a cyanotic appearance; an extreme activity of the flanks and nose was called upon to maintain existence. This aggravation of symptoms was brought about by half an hour's exercise that the patient was subjected to shortly before my arrival, (without my approval). Auscultation furnished an abundance of sibilant and sonorous rales; cough suppressed; urine of a dark brown color; appetite insignificant; desire for water very moderate.

Dec. 5th.—Pulse, 72; respiration, 40; left lung conveyed to

the ear a strong tubular breathing; on the right side, principally over the upper portion, it was of a sonorous character; expirium warm and dry.

Dec. 6th. Pulse 68, small; respiration 44; temperature $102\frac{1}{2}$. In order to test his pulmonary capacity, I had him led about one hundred yards, but owing to the alarming dyspnoea it produced I was obliged to have him sent back to the stable; the dyspnoea however very soon subsided without any medical interference.

Dec. 8th. Pulse 68; respiration 40; temperature $102\frac{1}{2}$. Sonorous and sibilant rales were still heard at different portions of the lungs; schneiderian membrane not quite so florid; nasal discharge albuminoid and beaded; cough stronger, but painful.

Dec. 10th. Pulse 73; respiration 22; temperature 103. Notwithstanding the patient partook of a fifteen minutes' exercise shortly before the examination, I found the respiratory acts decidedly diminished. The interchange of air within the lungs gave rise to a variety of murmurs that were not easily distinguished from one another.

From December 13th until the 29th (one month after the occurrence of the fire) continuous improvement of the pathological phenomena could be observed on each successive visit: his appetite increased, lay down regularly, when exercised looked quite cheerful: pulse reduced to 54; temperature $101\frac{1}{2}$; but the labored audible respirations, numbering twenty-four per minute with a dry, forcible cough and the augmented action of the nostrils and abdominal muscles was still in progress, indicating an emphysematous oppression of the lungs, which did not appear very favorable for a radical cure.

The owner, who considered the condition of the horses good enough to trust the balance to physiatrice, remarked, that he would report to me if the horses should not continue to do well.

As unusual as the cases appeared to me, their nature, in my estimation, did not require any other treatment than what would be indicated in an ordinary case of bronchial and pulmonary trouble.

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lowing dose, repeated every four hours. Extr. belladonna 3j. Tinct. lobelia 3ij. Spirits nitr. dulc. 3vj. Syrup simpl. 3j. Mf drench. After the third day I adopted a stimulating course of treatment, which I followed up for about ten days: this consisted of two drachm doses of carbonate of ammonia three times daily, after which time I administered one oz. doses of Fowler's solution twice per day. The inhalation of warm vapors was kept up for fourteen days morning and evening. Application of mustard to the walls of the chest was also resorted to several times on Bill.

In view of the extreme labored respiration that Dick displayed on the fifth day, and considering his powerful physical condition, I administered a cathartic, which gave him considerable relief.

At the outset it was my zeal to have the patients removed from the contaminated atmosphere that they were quartered in, to some pure, well-ventilated stable, but it was impossible for the horses to make any kind of a journey without aggravating the disease; therefore I deferred the project from day to day until the necessity grew less, and finally dropped that part of the treatment.

A perusal of my veterinary literature for analogous cases proved them to be very limited. I found but one instance, recorded in the *Reportorium* by Fry of Winterthur, where animals had been endangered and destroyed by the inhalation of heated air and wood smoke. In my patients the injurious agent was smoke exclusively, claimed by some to have been generated by the combustion of blue meadow grass, (*poa pratensis latifolia*) which was stored in the basement. This smoke must certainly have been cooled before reaching the equine department, through a door in the centre of the stable which had accidentally been left ajar.

This foreign material set up an irritation and inflammation throughout the tubular structures of the lungs to their ultimate ramifications, by the deposition of carbonaceous material. Not only were the lungs deranged by this morbid element, but it also created a hyperæmia of the nasal, laryngeal and tracheal mucous

membrane, thereby encroaching upon their respective caliber, giving rise to the above mentioned audible breathing and peculiar profuse excretion.

On March 19th, 1878, Dick was suddenly attacked with colic pains, dependent upon an impaction of the large colon, from which he died. Through this event I had an occasion to make a post mortem examination of his lungs, which presented a healthy aspect, but did not recede on opening the thoracic cavity.

Whilst visiting Dick I also had an opportunity to examine Tom and Bill. Tom recovered entirely from his ailment, but Bill was afflicted with pulmonary emphysema (heaves) in its severest form, rendering him utterly useless.

I am at a loss to account for the unsatisfactory termination that Bill fell victim to, in other way than that the violent exercise he at one time was subjected to by the groom in his ardent effort to have the team in harness before his month expired, thinking, that if he should be successful, he might retain his situation, which he had already been notified to vacate. However, it is possible that this permanent emphysema might have set in without that irrational manner of treatment, for at all times he exhibited more serious symptoms than either of the other horses. His pathological lesions may have been of a more serious nature. There may have existed a dilatation of the bronchioles, or a paralysis of the same, as well as of the air cells, produced either by the poisonous effects of carbonic acid within the lungs, or by the violent effort to inspire air during the suffocating moments. He, being of a nervous temperament, may even have ruptured a cluster of air cells during a frantic state he may have been in, while under the immediate influence of the smoke.

A very striking observation I experienced was the valuable prognostic services the thermometer furnished me. Considering the accelerated pulse and the alarming respiration, I might have been directed to express a very erroneous opinion regarding the final state of the patients without the aid of the thermometer, for which purpose as in a great many other cases it proved indispensable.

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THERMOMETRY OF THE DOMESTICATED ANIMALS, AND ITS USE IN VETERINARY MEDICINE.

BY AUG. ZUNDEL.

Translated from "*Vorfrage fur Thierarzte.*" Series I., Heft III., by
G. A. Banham, M.R.C.V.S.

CONTINUED FROM PAGE 287.

The thermometer has been little used in diseases of the typhus type in animals, although it has been of great value in typhus of man. According to Schmidt, Adam, Brusaseo, Bayer, and Stratthaus, the measure of the temperature in this disease gives very valuable explanations and conclusions for its diagnosis, prognosis, and treatment. The temperature provides us with a tolerably exact idea of the general condition of the patient; for example, if the temperature remains moderate, although some unfavorable symptom, such as dullness, &c., may be present, we may always entertain hopes of recovery. In diseases of the typhus type, we always have the pulse increased, as well as the temperature, but these are not always parallel to each other in intensity; for it is often observed that the temperature decreases whilst the pulse considerably increases. On the other hand, cases present themselves in which the number of pulsations are small, although a high temperature is present.

In diseases resembling typhus, a slow rise in temperature for the first, third, or fourth days often takes place; sometimes a rise of 1° to 2° is seen at the commencement, and the morning and evening deviations are always more marked than under normal circumstances. In the first case, a regular increase of the temperature takes place, and has received the name "staircase-like" (*treppenartig*); in others it rises at once to the maximum point. Brusaseo says, that the quicker the temperature reaches its maximum, the more dangerous or violent is the disease; whereas, when the curve rises slowly the prognosis is more favorable. The temperature may reach 41° to 42° , and Adam saw it even reach 43.75° . Stratthaus has seen horses recover after having a tem-

perature of 41.7° , whilst after 41.8° or 42° ,* they always terminated fatally.

The temperature remains for a variable period at this height, but always shows a deviation of 0.5° to 0.8° from evening to morning. Sometimes this variation is still greater, and Brusaseo observed a sinking of 1.4° , and even 1.8° , from evening to morning. From energetic treatment, such as *cold-bath, douche*, and internal remedies, a quick decrease of the temperature is observed; also, the daily deviations are less noticeable. After some days, (which varies in different cases), the temperature slowly decreases by the so-called staircase-like (*treppenartig*) curve, until the normal temperature is attained. In the evening, however, an increase is always seen, which by the morning is improved again. In some cases the temperature decreases rapidly, and, if it does not show an increase in the evening, we observe a great improvement next morning. In such cases the curve suddenly changes, and we may even have a normal temperature in the morning, although it was a high temperature the previous evening.

The temperature gradually cools, the differences disappear, and an apyretic condition is present. A diminution of about 1° daily, after a disease has attained its crisis, is a favorable sign, which symptom generally precedes others of improvement. A decrease of temperature without improvement of other signs, is generally indicative of evil, and often of internal hemorrhage. A violent diarrhoea can also cause a decrease of the internal temperature, especially if it suddenly appears. If the diminution is very striking, for instance 35° , we may look for septicæmia, necrosis of lungs or intestines, and a quick end. It is also a bad sign if the temperature suddenly rises. This is particularly so in diseases of the typhus type, in which case a sudden rise either points out that a local part is worse or that a relapse has taken place. At the commencement of the death struggle, we often observe an increase even to 43° , in others a decrease—each may take place slowly or quickly.

When the temperature remains at a high temperature for

* A short duration of a temperature of 42° and 42.5° is not uncommon, and recovery often follows.

some time, it is, as above mentioned, a bad sign, even if other symptoms show improvement. Liebermeister has ascertained that these abnormal and continuous increases of the temperature present themselves in most infectious diseases, where decomposition of the blood takes place. A distinct increase is noticed in anthrax, the thermometer standing at 41° , and sometimes at 41.7° . Brusaseo has seen it at 42.6° . At the moment of death, a sudden decrease to 38° , and even 36° , takes place. Fossati mentions that in an outbreak of anthrax, it was possible to recognize diseased animals by the thermometer. One or two days before the peculiar symptoms developed themselves, he always found an increase of 1° or 2° . Rivolta experimented with rabbits, and found an increase of 0.5° four hours after inoculation, and in one animal a rise of 0.75° in the same time, which rose to 2.25° after nine hours, death following in about seventeen hours.

In pig typhus (so-called) (Rothlauf der Schweine) the temperature rises from 40° to 41° ; and Gerlach observed a temperature of 43.1° and 42.5° an hour before death. Harms even reports a temperature of 43.4 .

In *septicæmia* a destruction of the tissues is characterized by an excessive increase of the temperature, which in horses may reach 41.9° . A horse affected with pyæmia had a temperature of 41° for nine days with very little remission (Bayer). In a dog the temperature was very fluctuating, the highest point being 41.8° , which at death was 38.9° , and after the last beat of the heart it rose quite suddenly to 39.2° . The pain, or traumatismus, of animals which have been operated upon, causes at the most an increase of 1° . When the thermometer shows an increase of 2° or 3° , septicæmia or pyæmia may be feared, and we must immediately seek for the origin of the infection.

In *paturient apoplexy* (kalbefieber), which I consider a septic infection, a temperature of about 41° is observed; and if a sudden or quick decrease takes place, we may safely prognose a fatal termination, the cooling being due to collapse or want of force. Adam, however, observed in one case the subnormal temperature of 35.7° , which gradually improved as the cow recovered her consciousness, when it showed a temperature of 39° .

In exanthematous fevers, which are generally of an inflammatory character, with the formation of papules, vesicles, or pustules on the skin, and less frequently on the mucous membranes, they take an acute course, and are frequently contagious (for instance, sheep-pox). At the commencement we always find an increased temperature, which, however, again decreases when the eruption appears on the skin. This is particularly the case in foot and mouth disease, in which Rueff, Stockflett, and especially Brusaseo found in the first stage a temperature of 41° to 42° ; but after three or four days it considerably decreased, if inflammation of the feet did not follow. According to Brusaseo, an increased temperature is present before the disease is visible, so that we are enabled to detect the healthy from the diseased by this means.

In *variola ovina*, Peters always found the temperature high, as a rule 42.6° , but with great fluctuations, the temperature only periodically attaining this degree. The temperature is highest at the commencement of the disease, decrease taking place as soon as the eruption shows itself, whilst a return of increased warmth is noticed in the suppurative stage. Death either occurs when the temperature is considerably below the normal standard, or when it quickly rises above 43.5° .

In *rinderpest* the temperature reaches 41° and 42° , and according to Gerlach, even to 43.2° ; the intensity of the disease being in relation to the temperature. It has been ascertained by Anderson, Gamgee, Gerlach, Pflug, Bouley, Chanveau and Wehenkel that an increased temperature can be observed a day or a day and a-half before the other symptoms. By experiments carried out in Dorpat, it was proved that an increase in the temperature took place 36 or 48 hours after inoculation. The rise in the period of incubation is from 1° to 2° ; this may sometimes be valuable in daily practice. The temperature rises very quickly in rinderpest, the maximum being often attained the first day, at which point it remains for two or three days, after which it falls to little above normality: a slow rise from day to day is an unfavorable sign; and a sudden decrease foretakens the approach of death; adynamia, with collapse. In the course of this disease we often observe

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what Gerlach called a "relapse," that is, the temperature suddenly rises to the same degree it presented on the first day. We have few diseases which gives such remarkable curves as this.

In *pleuro-pneumonia contagiosa*, Dele first noticed a change in the temperature in the stage of invasion, and declares it normal in the incubation period (latent aufangsperiod); but this is not endorsed by Smeale, for he says, that although the animals appear healthy, they show an increased temperature if they are under the influence of the contagium (*i. e.* if they are affected), but this is an assertion which we can scarcely receive as truth. According to Dele the temperature rises from 38.2° to 41.3° , and the more acute the disease is, the quicker this takes place, the temperature remaining high until the disease abates. Dele lays great stress on the value of the thermometer for the diagnosis of *pleuro-pneumonia contagiosa*. He says there is no other thoracic disease which gives a temperature of more than 40° , and if we have it above this we may be sure we have a case of *pleuro-pneumonia contagiosa* to deal with.

Glanders, in the chronic form, generally presents no increase of temperature; we sometimes even find a decrease; we generally observe great irregularities, in cases which are of a remitting type. In the acute form, however, Brusaseo found the temperature gradually rose to 41.5° and 41.7° , being interrupted by slight deviations.

A decrease of temperature is seen in cachectical diseases, especially dropsies, and not in those of a febrile character. In a case of peritonitis, accompanied with ascites and chronic indigestion of a cow, the temperature presented only 37.25 . Ruhr and Siedamgrotzky observed the temperature fall to 35° , sometime before death occurred. In passive enteritis of horses, a reduction of 1° to 1.5° is seen.

Siedamgrotzky noticed the temperature gradually decrease from 38° to 34° and 35° , in a dog suffering from icterus, and once it even reached 32° , resulting in death.

From *excessively draining* the system, as from vomition or purging, hemorrhages, and after debility caused by hunger or thirst, in short by all cases where the strength is much exhausted

a diminution of the temperature is always more or less observed.

Chronic diseases are always accompanied by decrease of temperature, and especially *tuberculosis*. If an increased temperature presents itself in the last named disease, it proves that a complication, with inflammation, is present, or that the disease is at a crisis; the increase is usually small but accompanied with aggravation towards evening; it is often observed to be of a remitting type.

In *paralyzed parts*, Schmitz, Barensprung and Nothnagel observed a slight decrease in the temperature. Tolet, on the other hand, found an increased temperature on the paralyzed side in *hemiplegia*, which as a rule did not exceed a degree. The temperature is partially decreased in dead (gangrenous), cedematous, and indurated tissues, also frequently in those parts of the body which are at rest, as well as in all parts where the circulation is small, or the cooling is increased; a reduction of 5° or 10° can take place. We cannot ascertain this reduction by the thermometer at the rectum, but with the "Thermographen."

The thermometer has a particular diagnostical value in *diseases of the brain and spinal cord*, especially to separate encephalitis from chronic congestion and amentia (Dummkoller). It is maintained by Zanger and Johne, that in encephalitis the temperature rises to 40° and 41.3° , whilst in amentia (Dummkoller), it remains normal, or sometimes below the normal point. It should not be forgotten that the life of the veterinary surgeon is sometimes in danger, by ascertaining the temperature of animals suffering from acute encephalitis.

It is erroneously asserted that *tetanus* is accompanied with increase of the temperature. Bayer noticed that the temperature remained almost normal, so long as the disease takes a moderate course; but if the disease takes an acute and fatal course, the temperature quickly rises, and even surpasses that observed in other diseases. In one case the temperature was 39.2° some days before death, but about an hour and a-half before death it stood at 41.2° , and at the moment of death 44° , from which it rose within 50 minutes to 45.4° , where it remained for about five minutes, and then began to fall. The same was observed by Trasbot. In

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one case, which recovered, the temperature never exceeded 39.3° . Siedamgrotzky noticed in a tetanic dog, which recovered, the temperature to be about normal, 38.4° , at the commencement of the disease. On the fourth day it fell below the normal, viz., to 37.3° , and gradually returned again to the original temperature from the fifth to the eighth day.

In the nervous form of *febris catarrhalis epizootica canum* (distemper), the temperature is generally low, and in *chorea*, it is generally subnormal; the same is observed in *eclampsia*. During violent cramps, however, the temperature is increased to 39° and even 40° . By the phenomenon of depression a decrease in the temperature to 35° was noticed by Siedamgrotzky, in a fatal case of distemper caninus.

I have used the thermometer to diagnose the different kinds of colic in horses. For instance, to distinguish an inflammation of the intestines (enteritis) or inflammatory colic, in which venesection is necessary, from the non-inflammatory, which are generally due to congestion, and states of the blood caused by emboli in the arteria mesenterica anterior, and also from paralysis of the intestines, in which case irritating agents are useful. In the first case we find the temperature rises to 40° , whilst in the last it sinks to 37° and even to 36° , and if a sudden increase takes place in the last instance, it is a sign that mortification has set in. Bayer says that no correct idea of the temperature can be obtained in colic, from the fact that the clysters act as a local means of cooling the rectum and vagina. Adam has observed a temperature of 39.6° in vagina during enteritis.

Strangulated hernia and invagination of the intestines are always accompanied by a low temperature, and the more extensive the incarceration is, the more marked is the decrease of the bodily temperature.

It was above remarked, at the commencement of this paper, that fever and temperature go hand in hand together during disease, and that they form the initial phenomena. They are due to the local changes caused by alterations in the action of the nerves, which is followed by an increased consumption of the tissues. It has been proved by Liebermeister that the co^2 increased with

the temperature; Coze and Fely also proved an exact connection between the quantity of urine excreted and the temperature. Animals suffering from fever excrete one and a-half times more of both decomposed products than those in health.

If we compare the relations of the temperature to the pulse and respiration, we find, as a rule, that in acute disease it stands in direct relation to the frequency of the pulse, but we do not find that a given temperature corresponds in any way to a given number of pulsations. A great contrast often exists between the temperature and the pulse. We may often observe an improvement in the pulse after the temperature has fallen, whilst increased warmth is often preceded by increased frequency of the pulse, but the pulse cannot be accepted as a scale for the degree of fever present. As a rule, we should always take that moment which presents the worst sign; thus, if the pulse is quick and the temperature moderate, the pulse is most important; and if the pulse is slow and the temperature high, then the temperature; and this relation is the more important the greater the contrast shown.

There is no proportional relation between the temperature and respiration.

In conclusion, I will give the researches of Bulkey, which are based upon numerous observations in different diseases, and which are commonly received as references.

The daily observation of the pulse and respiration together with the temperature is often of the greatest importance for the (cliniker) practitioner. If the general symptoms harmonize with the temperature but not with the pulse, we may follow the first two in spite of the pulse not being in unison. When the pulse and the symptoms of the disease present an unfavorable course and the temperature points in the opposite direction, it is only valuable when the temperature shows a marked and persistent improvement. If the pulse and other symptoms show improvement, and increase of the temperature simultaneously takes place, it should always excite hesitation. In order to obtain the greatest advantage from the remaining means of research, they should be considered in connection with the temperature. By an exact and

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systematic comparison of the symptoms of disease, (*i.e.* the pulse, respiration, temperature, etc.) the diagnosis, prognosis and therapy is very much facilitated.

EDITORIAL.

OPENING OF VETERINARY COLLEGES.

The month of October in our country is, for the medical profession, one of certain importance, as it is during this month that medical schools begin their winter sessions; and that, restored by the rest of summer or fall vacations, the faculties of the numerous medical colleges of the United States are ready to resume their work before their constantly enlarging classes of students.

Veterinary colleges, following the example set them by their sister institutions, have also taken this month for the opening of their courses of lectures; and in New York as well as in Canada, the veterinary colleges have had their openings, and are now more or less at work. We publish the reports of these exercises as they took place at the American Veterinary College and at the Montreal School, which are the only ones which have reached us so far. Our friends in Toronto will probably favor us with a similar notice, and as soon as it is received we will present it to our readers.

As far as we are able to judge, New York and Montreal have their lecture-rooms well filled with students, and their faculties feel satisfied with the result crowning their efforts.

In both institutions, the different States of the Union are well represented, and students from north and south, from east and west, have matriculated, and by their attendance at these colleges prove that the importance of the profession and the opportunity offered to young men for a lucrative and honorable position in life, begin to be better appreciated by our countrymen. This is most encouraging to those whose efforts have been made in that direction, and must be a gratifying stimulus to keep them

working with courage for the advancement of a science which has been for many years so sadly neglected in the United States, much to the detriment of our live-stock breeders.

PLEURO-PNEUMONIA.

We begin, in this number, the publication of a translation by Mr. F. S. Billings of a German article on pleuro-pneumonia, in which the subject of inoculation seems to be the principal object. This, we have no doubt, will prove interesting to our readers, as many, we know, are averse to this operation, either by reading, by practical observations, or, perhaps, some by preconceived opinions. We had the honor, some time ago, to present a paper on this subject before the New York State Veterinary Society, in which we reported as far as we could the results of the observations and conclusions arrived at in many European countries; but we fear that our voice did not possess enough power to convert the non-believers in inoculation. To them we would recommend a close reading of Dr. H. Putz's article, which Mr. Billings has so kindly sent us for the pages of the REVIEW.

VETERINARY COLLEGES IN NEW YORK STATE.

In July, 1877, we announced the resuscitation of that institution whose doors had been closed since 1875. After an existence of about thirteen months, we heard that this school, "though the only institution legally chartered and authorized to grant diplomas," had once more closed its doors, and though another attempt at a second revival has been made, we understand that it yet remains closed for want of * * medical attendance. From the scattered officers of that institution another has sprung up under the name of the Columbia Veterinary College, organized under the same law as the American Veterinary College—a law which recently proved as satisfactory for such a purpose as, some short time ago, it was pronounced valueless and inefficient.

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VETERINARY HONORS.

We take pleasure in announcing the creation of an important position in the Board of Agriculture of the State of Illinois. Dr. W. H. Parren, well known in that State by his large practice and numerous writings in different agricultural papers, has been appointed State Veterinarian to the Board of Agriculture.

One of the graduates of the American Veterinary College, Dr. C. B. Michener, holds a somewhat similar position in Pennsylvania.

Prof. James Law, of Cornell University, has been for many years consulting Veterinarian to the Agricultural Society of the State of New York.

These official appointments tell how, by degrees, the importance of the veterinary profession becomes realized by our State governments. Is not that the first step towards the formation of a general governmental Veterinary Department in connection with the Agricultural Bureau at Washington? Until this is formed, can we hope to see our American sanitary service well regulated?

OPENING OF COLLEGES.

AMERICAN VETERINARY COLLEGE.

The opening exercises for the regular winter session were held in the lecture room of the College buildings, on the 30th of September. Students, trustees, physicians and friends of the institution had assembled at 8 o'clock, P. M., and in such a number that though the room was crammed full, many had to remain standing in the hallway, satisfied to honor in this way by their presence the ceremonies which were about to take place. President Samuel Marsh opened the meeting by a few short and well applied remarks, relating to the success of the institution and to the very prosperous condition in which the College found itself after such a short time since its foundation; congratulating the

members of the faculty on the results which had thus far crowned their efforts. He pointed out the fact of the necessity which was brought before the Board of Trustees of taking steps at once for obtaining larger and better accommodations for the class of students which were likely to fill up the rooms of the College, a step which in fact he considered as of vital importance to the College.

Hon. Henry Bergh, the worthy President of the Society for the Prevention of Cruelty to Animals, was then introduced. He delivered one of his good and characteristic addresses, taking occasion to bring forward the importance of the veterinarian in the very work in which he had been himself engaged for so many years.

Hon. E. T. Gerry took the floor afterwards, and, referring to the bill which had been presented last winter before the legislature at Albany, with the object of obtaining a better regulation for the practice of veterinary medicine in the State of New York, strongly recommended united action on the part of veterinarians and of the different schools in the country, saying he had no doubt that the bill would be passed by the next legislature.

Prof. F. D. Weisse, Secretary of the Board of Trustees, informed the class that the presentation of credentials and the examination for matriculation would take place the next morning, and the regular lectures would begin on the second day of October.

A general visit to the different departments was then made by the company present.

At the examination which took place next morning, twenty-one new students were allowed to enter their names on the matriculation book, the following States being represented: New York, New Jersey, Massachusetts, Pennsylvania, Illinois, Maine, Virginia, Iowa, and one from the West Indies.

The prospects are that a class of 30 or 35 will attend the lectures during the winter session, ending in February, 1879.

MONTREAL VETERINARY COLLEGE.

The opening lecture of this College was delivered last evening by Professor Wm. Osler, M.D., M.R.C.P.L., before a large

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and appreciative audience of students, medical men, and veterinary surgeons. The subject chosen was "Comparative Pathology," and being one to which the lecturer had given special attention, more particularly during the past summer, he having been engaged with Dr. Burdon Saunderson and Dr. Klein, at the Brown Institute in London, specially on this and kindred subjects, a more than ordinary exposition of the present position of this study was expected, and the audience were not disappointed. The Dr., after defining the subject, Pathology, as being the physiology and microscopic anatomy of disease, went on to explain the theories and results of recent investigations of *contagium vivum*; the discovery of *bacteria* in the blood of diseases of the anthrax variety; the recent discovery of these organisms in the blood in the so-called hog cholera, or, as it was more properly named, "*contagious pneumo-enteritis*" by Dr. Klein. The Dr. next referred to the unjust "Contagious Diseases (animals) Act" of 1878, recently passed in England, to come into force on the first of January next, by which our cattle trade was to be seriously interfered with, if not ruined. All American cattle, including Canadian, were to be slaughtered at the port of entry. In Canada we have no contagious diseases, and it is manifestly unfair to include our cattle. In the Western States, it is true, they have the *splenic fever* (Texas fever) and *pneumo-enteritis* in pigs. Our Government should lose no time in placing the matter in proper veterinary hands; all out-going stock should be inspected by qualified inspectors. He referred to the advantages already derived from the quarantine at Point Levis. An animal affected with hog cholera arrived, and was detained by Mr. McEachran, the inspector, and thus prevented from spreading a virulent and contagious disease among our stock. The Government should do everything to render the quarantine more efficient. The lecturer concluded his lecture by explaining to the students the nature of their studies, urging them to entertain a high appreciation of scientific study, to be regular in their attendance, and to adopt a systematic disposition of their time, and to take advantage of the opportunities afforded them while students here.

Prof. McEACHRAN followed with a few words of welcome to

the students. He was happy to find that year by year the number increased. This session showed an increase of ten over the previous one. Over thirty had already enrolled—thirteen from the United States. Illinois, Wisconsin, Massachusetts, New York, Pennsylvania and Vermont had sent their representatives. Toronto and Ottawa were represented also, and he was particularly glad to find no less than thirteen French Canadian students among the number. On account of the prevalence of the "boat race fever," he had yielded to the request of the majority of the students, who had taken it, and the lectures proper would be postponed till Thursday morning, when he hoped all would settle down to the active duties of the session.

—*Montreal Herald, Oct. 2d, 1878.*

PRESIDENT BERGH'S ADDRESS

AT THE OPENING EXERCISES OF THE AMERICAN VETERINARY COLLEGE.

Gentlemen of the American Veterinary College:—At what precise period of time this world of ours was created, is still, and ever will remain a mystery to human knowledge.

That it was created, is the earliest fact we have in our possession; and it is even probable that it was created before time itself began.

Pending however its formation, the elements of which it is composed, are supposed by some philosophers to have been floating about in infinite space, but all the while gravitating towards one common centre.

When these inert masses of matter had finally been united; darkness, the most heavy and impenetrable, pervaded all things, until the fiat of the Almighty went forth—"Let there be light!"

With light came heat, and with heat came vegetation, and after vegetation came animal life—and last of all came Man!

Such was about the order in which the globe we inhabit was organized, and you will not fail to recognize especially one promi-

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ment fact, namely: that mankind was the last work of the Deity.

It would seem from this Divine ordination, that all these, and countless other elements in the existence and well-being of our race, were all sent in advance of man's advent, to prepare for his reception.

Well, at length he came, and what followed?

So far as dumb animals are concerned, I do not hesitate to say, that they would have remained better off, if this last creation had been omitted.

By the Bible we are informed, that prior to his arrival, disease, suffering, and death were strangers to our planet; that the lion and lamb lay down together—and that fear and cruelty were unknown.

Such, briefly, was the condition of things, until this paragon came upon the scene; when soon thereafter all became changed!

By reason of his perverseness the whole face of nature was speedily transformed into what we now behold it—the air, the earth, the sea, and all they contained, arrayed themselves in hostility to one another—and purity and peace were supplanted by malice, violence, and death!

The general devastation and ruin which have ensued, would require years to describe. I propose to dwell only a little while on their consequences to the *lower* animals, as they are termed.

And at the start, I am met by the logical fact, that had man not been created, your profession, gentlemen, would have been unnecessary.

But he did come, and along with him came spavin, glanders, fractures, castration, etc., etc., and finally, that scientific deviltry, known as vivisection!!

Such, gentlemen, and myriads like them, are the claims whereby the immortal being, man—whom we are told was made in the image of his Creator—constitutes his right to pronounce himself the superior animal.

It would be a useless waste of time to expose to you the fallacy of this arbitrary and illogical assumption in its physical and moral aspects; for your profession, which brings you into such

close relations with those dumb servants of mankind, have already demonstrated to you the truth, that, by their physical power, intelligence, docility, and inappreciable utility, and devotion to the interests of our race—they have quite as much to do with the existence and progress of civilization as man himself.

Can you think of a single relation in life, where in some degree they are not represented?

What would become of agriculture, architecture, and nearly all of the mechanic arts without them? Who drag the plow, nourish the soil, and spare us the pains of locomotion while they live; and when dead feed us and clothe us with the products of their bodies?

We are told, that with the creation of Eve, the Almighty Maker of all rested from His labors.

Well, let us contemplate for a moment a beautiful woman. Let us begin with the tiny shoes upon her feet; the robe of dazzling silk; the minion gloves upon her hands; the pearls which hang around her alabaster neck; the plumes which ornament her hair; the costly India shawl, and cold-defying furs, and sometimes even the ruby color of her cheeks, and tell me whence do they all come?

And then again, when the fatigues of the day are over and weary nature seeks repose, is it not upon feathers, wool, and hair that aching limbs recline?

In their moral characteristics too, man's arrogant assumption of superiority is conspicuous; and this truth, gentlemen, your daily experience and observation must confirm.

In their affection and defence of their young—nay, their skilful and admirable strategy in circumventing the cruel schemes of their great adversary, man, frequently they astonish and confound us.

The lioness, for example, robbed of her whelps, causes the wilderness to ring with the proclamation of her wrongs; and the little bird whose nest has been invaded, fills the groves with notes of sad complaining.

To evade the pursuit of the sportsman, the partridge covers up its young with the grass of the field; and even when no other

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means are practicable, suffers itself to be killed at a distance from its beloved progeny !

All this seems too much like romance to be real, but to the confusion of our race it is true.

Yes, all this is true—and more ; by man's revolting barbarity—aided perhaps by the necessities of his fallen condition—the entire animal race fears him, and flees his presence, with well-founded apprehension.

And yet these humble beings do exist, and can better exist without us than with us, while we, and all the civilization of which we boast, would perish probably in a twelvemonth, were they one and all to be extinguished !

It is a well-ascertained fact, that wherever the horse is not found, civilization does not exist.

If I thus seem to occupy too much of your time with these considerations, it is to impress upon your minds, with all the force I am able, the great moral responsibility which rests upon your profession, of carefully fitting yourselves for the performance of a task which involves the amelioration or infliction of such tremendous sufferings, as well as enormous destruction of property, which either ignorance or want of humane feeling may entail.

According to official statistics, fifty millions of animals are slaughtered annually in this country for food, exclusive of those killed for other purposes.

In 1870, eighty-five millions of animals labored for our support, which, estimated in day's work, at fifty cents per day for three hundred days, makes the prodigious total of four hundred and twenty-five millions of dollars annually ! But then, gentlemen, this sum, vast as it is, is only a fraction of the tremendous pecuniary benefit these despised and abused creatures procure us, and is derived from three races of animals only, to wit: the horse, the ox, and the mule.

It is a fact as strange as it is abhorrent, to every sentiment of justice and gratitude, that of all the lower animals, the one which is most useful, profitable, and indispensable to mankind, is the most abused, and that is the horse !

It is more particularly towards that noble creature that your scientific and humane practice is directed; and the wisdom which dictates that earnest and exceptional solicitude, has a ready explanation in the great popular panic, which a few years ago manifested itself, when this country was threatened with the loss of the labor of that unequalled servant.

In order to protect him from harm, and to repair injury by the least painful methods, you penetrate the mysterious economy of nature, and interrogate the sources of life and motion. To accomplish this laudable purpose, and prevent waste and agony resulting from the ignorance and insensibility of empiricism, the experienced gentleman, Dr. Liantard, to whose untiring perseverance this College mainly owes its existence, has placed it within your power, gentlemen, to obtain the necessary skill.

Until within a very few years the members of your profession were rudely denominated "Horse Doctors."

The general tendency of the minds of ignorant, prejudiced, and vulgar persons, is to ridicule that which their biased understandings exclude an intelligent investigation of.

And no more potent element, for the moment, can be employed, as I have learned by personal experience, than ridicule.

But, like every other effort directed against the immutable laws of justice and nature, they run their ephemeral course and subside, with frequently no other evidence of their existence than the strength which their senseless opposition has imparted to the right.

Perhaps, in connection with this subject, I may be pardoned for illustrating the truth of the observation I have just made, by a brief reference to the institution over which I preside:

Born amidst the depressing influences of public apathy and indifference, it was destined to encounter a hostility, all the more pronounced by reason of its presumed infringement of the rights of property.

The unreflecting and brutal world had been so long accustomed to beat, mutilate, and kill the animals over which they exercised the dominion of ownership, that any legal interference with that time-dishonored privilege, was regarded as a most fla-

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And I may here parenthetically remark, that that sacred instrument seems never so terribly violated as when it interferes with a few citizens doing whatever they — please.

But that reformer, Time, at length overcame this factitious but powerful adversary, until now he has disappeared almost entirely from the conflict, and we have only the logical controversies of divergencies of opinion and personal interest.

And a similar experience has also been yours; for the "Horse Doctor" has disappeared, to be replaced by the veterinary surgeon, who now takes rank by the side of the human practitioner.

And I fail to discover, gentlemen, any essential difference between the principles and purposes which underlie the human and animal medical science—if I may employ such a term.

Both are based on a knowledge of the laws which govern animal life; the blood, bones, and tissues of both are fundamentally identical and subject to the same influences and vicissitudes, and the universal climax, death, betrays no other deviation than is presented by the name or form of the creature.

If any doubt exists as to the truthfulness of this theory, it is refuted by the cruel experiments of the bloody operators on the quivering bodies of dumb animals, performed in the outraged name of science.

If the Maker of all things had given to the beast an organism totally differing from that of man, of what avail would be their needless and criminal investigations?

No; pain and death have but one significance, whether the subject be man, or be it the speechless, uncomplaining brute.

The consequences to the public of a better education in the laws of animal medicine, are only beginning to be fully realized.

Not only is the skill of the veterinary practitioner applicable to diseases and accidents of domestic animals, but his learning and experience should be employed by the State in a sanitary point of view.

That the national health is greatly deteriorated by the inhuman treatment of animals while in transit upon railroads and otherwise, by which the flesh becomes vitiated so as to be the

source of numerous fatal diseases, no sensible physiologist or surgeon will deny. Can there be a more exalted ambition or duty, than to educate young men to stand as sentinels between the unsuspecting public and the diseases and death which the cupidity of corporations engender?

To this College and similar ones, let us hope that the time is approaching when the State will address itself, for surgeons, well-trained in the diseases of animals destined for human consumption; for millions of money are annually sacrificed, to say nothing of the loss of health and detriment to moral character, by reason of the absence of just such officials as it is the province of this institution to supply.

And now, gentlemen, I desire to approach with all the gravity which the subject demands, the practice of that art which it is your aim, let us hope, to perfect yourselves in.

It is an undeniable fact, that the malpractice of ignorant pretenders in diseases of dumb animals, has crippled and killed more creatures than all other causes combined.

Owing to the absence of any restraining power on the part of the law, the most densely stupid blockhead may, after a brief experience in a farrier's shop, nail up his "shingle," as the dishonored morsel of wood, bearing his name upon it, is called, and henceforth insult science by calling himself a veterinary surgeon!

I beg you to believe that I am not exaggerating when I say that, in my capacity of assistant public prosecutor, numerous instances have occurred, where the witness—such a one as I have described—has been put upon the stand, who could not correctly pronounce, and absolutely did not know the meaning of the word indicating the profession to which he claimed that he belonged. No one knows better than you do, the murderous consequences of the treatment inflicted on helpless dumb animals by these senseless malefactors.

Neither the spirit of mercy, nor an admission of the fact, that gentle treatment, along with the curative principles inherent in nature, may effect a remedy, have any weight in their crude diagnoses.

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the knife, the scalpel and the saw, are the barbarous instruments which these merciless ruffians employ to torture the hapless animal with, and astonish the humane and terrified beholder.

The hewing of granite in the prisons of the State, or the congenial treadmill, are the sole occupations which their barbarity adapts them to.

To put a stop to these inhumanities, as well as their kindred abomination—vivisection, the Society I represent has made repeated and earnest applications for redress to the Legislature, through its counsel, Mr. Gerry, and if these miserable torturers of animals, and destroyers of valuable property are ever to be reformed or annihilated, it will be through the enlightening influence of Veterinary Colleges like this.

The feet of the horse are to him what the foundations are to a house. Let them be defective, and neither of them can stand long or perform the duties required of them. And yet no part of that invaluable animal is of half the importance as his feet. He may be blind, wind-broken, spavined and consumptive; but so long as his feet, the insensible foundations of his animal superstructure, are intact, he can be rendered useful and profitable by judicious patching, nailing and repairing, like to the decaying edifice, whose base is rocks.

With an incredible disregard, however, of this obvious fact, the farrier's first act on the entry of the animal into his shop, and after having saluted the friendly creature, perhaps, with a blow from a convenient rasp or hammer, is to commence slicing off huge pieces of the hoof, until, not unfrequently, the muscular tissues are visible!

Until very lately there was to be seen in almost every shop an infernal machine named a buttress, a sharp instrument formed like a miniature shovel, with which the iconoclastic operator exercised his destructive vandalism.

To the professors of Veterinary Science, here and elsewhere, I would make the earnest appeal, to effect the abolition of a practice so manifestly absurd and ruinous. A rasp in the hands of an intelligent workman is nearly all that is required to level the hoof for the reception of the shoe, without having recourse to the

dangerous instrument alluded to, or the equally unnatural practice of burning the shoe into the horn.

If farriers will not listen to the dictates of reason, nor heed, gentlemen, your scientific remonstrances, then owners of horses should withdraw their patronage from establishments whose practices are in such direct violation of the plainest precepts of anatomy.

I should trespass too greatly on your time and patience, were I to enumerate even a fourth part of the perverse blunders and ignorancies of these self-sufficient tyros in their treatment of that creature, which may be justly regarded as the greatest acquisition man has ever made to civilization. I will, however, ask your further indulgence while I refer to one or two other objects affecting the health and comfort of the horse, the use of which may be solely attributable to the vanity and ostentation of its owner.

I allude to the cheek-rein and the terrible bits now in use. The former invention, if originally designed as an instrument of punishment, or to prevent the animal from freely performing his work, by allowing him the use of his head, should be regarded as a perfect success.

The original implement was bad enough, but a modern inquisitor, named Jackson, has produced another which cannot fail to rejoice the hearts of all persons who take pleasure in torturing their animals while making their rounds of the Park. It is more immovable than its predecessor, and possesses—to all such—the additional attraction of pressing upon the brain and skull of the animal, while it holds its mouth wide open, and prevents the natural operations of the saliva.

I am unable to say whether its inventor has applied to Washington or Sing Sing for a patent, but he is certainly worthy of the highest honors the latter establishment can bestow. This, along with the double bits forced into the mouth of the horse, occasion to that generous and uncomplaining animal, an amount of suffering, which, in ancient times, would have been regarded as a first-class punishment for the vilest of animals.

One word more, gentlemen, and I have done.

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Human laws may reach and punish a few of the most atrocious acts of cruelty, but there are many others which, like vivisection, along with those I have named, escape their cognizance, and owe their existence to the careless apathy of the public.

The spirit of humanity must elevate its voice, and inculcate its precepts in the school, the college, and the lecture-room; in the courts of justice and in the pulpit. It must speak through the mouths of poets, philosophers and physiologists; it must invoke the *press* to stamp its dictates in the indelible characters of ink and type, and give them passport over the world. It must implore it to brand, with disreputable stigma, every cruel deed; that those who are not to be allured to mercy by high and generous motives, may be deterred from cruelty by the dread of *shame!*

The Hon. Elbridge T. Gerry, counsel to the American Society for the Prevention of Cruelty to Animals, followed Mr. Bergh with some well-chosen remarks, illustrative of the address which preceded them.

His legal anecdote relating to Mr. Smith, the "Vintnery Surgeon," who never wrote his name in his life, but always made his mark; and who had never been in any of the criminal *institutions* of the State, was particularly rich with humor.

VETERINARY TITLES.

By D. McEachran, F.R.C.V.S., Montreal Veterinary College.

From time to time discussions on this subject have appeared in the columns of the journals of the profession, which to outsiders must give the impression that there must be something wrong in the constitution of our schools, or the education of our pupils, when so much ignorance exists as to the titles which the possession of certain diplomas confer on the holders thereof.

I am sorry to find that similar discussions are in progress in this country, and, unfortunately, conducted with unseemly bitterness.

I have been asked by a professional gentleman in New York to reply to a number of questions having special application to another member who it is claimed wrongly uses certain letters appended to his name. Having no wish to interfere in their personal quarrels on the subject, yet being desirous that the profession in America should know the rights of professional titles, I take the liberty of placing the following facts before them, through the columns of the REVIEW:

THE ROYAL VETERINARY COLLEGE,
GREAT COLLEGE STREET, CAMDEN TOWN, LONDON.

This teaching college was founded in 1791, and from that time up to the present has had the power to issue diplomas to qualified students, who had the right to call themselves Veterinary Surgeons, and affix the initial letters V.S. to their names. I think, however, that this examination and diploma has been discontinued since the charter was granted to the Royal College of Veterinary Surgeons, and hence we find all the students of the Royal Veterinary College, London, are members of the Royal College of Veterinary Surgeons and use the letters M.R.C.V.S., in consequence.

THE EDINBURGH VETERINARY COLLEGE.

This college properly dates from 1819, a year after Professor Dick obtained the diploma of the Royal Veterinary College. Its connection with the Highland and Agricultural Society, however, dates only from 1823, when that Society, recognizing the usefulness of the young and struggling school, extended their patronage to it, and undertook the appointing of the Examining Board and granting certificates of qualification.

The success of the Edinburgh Veterinary College was thus assured, and the Society's certificate was accepted both by the British Government and the India House on the same footing as the diploma of the London school, both being eligible for commissions in their respective armies. The graduates of Edinburgh also styled themselves Veterinary Surgeons and affixed V.S. to

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their names; the V.S. of London usually adding *L*, and the V. S. of Edinburgh, *Edin*. Up till 1844, when the Royal College of Veterinary Surgeons came into existence, no other affixes were made use of, correctly at least.

THE ROYAL COLLEGE OF VETERINARY SURGEONS.

This corporation is not a teaching college, as many imagine, but the representative body of the profession, chartered by Government and granted certain powers for the purpose of advancing and protecting the interests of the profession.

In 1844, on the application of the following V.S's., viz: Thomas Turner, William Joseph Goodwin, Thomas Mayer, Sr., William Dick, William Sewell, Charles Spooner and James Beart Simmonds, a charter was granted to what has since been known as the Royal College of Veterinary Surgeons, in which it was declared, that "the veterinary art, as practiced by the said body politic and corporate, shall from henceforth be deemed and taken to be and recognized as a profession; and that the members of said body politic and corporate, solely and exclusively of all persons whomsoever, shall be deemed and taken and recognized to be members of the said profession, or professors of the said art, and shall be individually known and distinguished by the name and title of Veterinary Surgeon." Among other privileges the charter empowered the council "to fix and determine the times, places and manner of examining students who shall have been educated at the Royal Veterinary College of London, or the Veterinary College of Edinburgh, or such other Veterinary College as hereinbefore mentioned, and who may be desirous to become members of the said body politic and corporate; and for regulating the nature and extent of such examinations; and for the appointment of persons to examine and determine upon the fitness and qualifications of such students, as members of the said body politic and corporate; and for fixing and determining the sums of money to be paid by such students, either previous to their examinations or upon their admission as members of the said body politic and corporate." "No professor of any or either of such colleges as aforesaid, of which the person desirous of becoming a member of

the said body politic and corporate shall have been a student, shall in any way or manner act or interfere as the examiner of such person; and that all qualified students who shall have passed the said examination to the satisfaction of the examiners, shall have the right to claim admission as members of the said body politic and corporate."

As stated in the published memoirs of Professor Dick, page XLI. "Although Professor Dick had been one of the petitioners for the charter, as he stated at the first general meeting held under it, he was not to be held as homologating it by any part he might take in the proceedings; the reason being that several clauses affecting him had been introduced into it, and others omitted without his knowledge or consent. He showed himself willing, however, to afford every facility to the working of the charter, so far as the Edinburgh Veterinary College was concerned; and for three years after the charter was obtained, the Highland and Agricultural Society's certificate was not granted to the students who passed the examiners appointed by the Council of the Royal College of Veterinary Surgeons." For the reasons given in full in the memoir above referred to, Professor Dick severed his connection with the Royal College of Veterinary Surgeons, and the Highland Society again conferred their certificate, which continued to be recognized by the Government and the India House.

The withdrawal of Professor Dick from the Royal College of Veterinary Surgeons did not prevent any of his students who chose from becoming members of that body; in fact, a certain proportion of them every year became members of the R. C. V. S. For the convenience of the Scotch students, a board of examiners was appointed to meet once a year at Edinburgh.

Successful candidates from either teaching college, passing at either board, were admitted and declared to be members of the Royal College of Veterinary Surgeons, and could use the initials M.R.C.V.S. The addition of either L. or E., is as unnecessary as it is stupid, there being only the one College of Veterinary Surgeons in Britain. Eighteen months ago, the R. C. V. Surgeons, with a view to encourage higher education, applied for and ob-

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tained an amended charter, empowering them to confer a higher degree than membership, entitled Fellowship, the initials being F.R.C.V.S.

The unsatisfactory state of affairs in relation to veterinary diplomas in Britain for many years has proved a great injury to the profession, giving rise to much discord and hard feeling, but is happily soon to be terminated by arrangements which are in progress by the Highland and Agricultural Society of Scotland, for admitting the Society's certificate-holders as members of the Royal College, and terminating the examinations of the Highland and Agricultural Society, so that before long hundreds of those who at present have only the right to affix V.S., Edin., may legally, if they desire it, without examination obtain the right to use M.R.C.V.S., and let us hope that L. and E. will no longer be added, but all being one united profession, will endeavor to prove their college motto, *Vis Unita Fortior*.

CORRESPONDENCE.

Editor American Veterinary Review :

SIR:—During the last winter session of the American Veterinary College the students entertained the idea of organizing a society for their mutual advancement in veterinary science, and then appointed a committee to endeavor to give the suggestion a practical result. Having obtained the approval of the Faculty, the students, at a meeting held on the 18th inst., organized the Medical Association of the American Veterinary College, electing as officers Prof. A. A. Holcombe, D.V.S., President; T. B. Rogers, Vice-President; A. S. Brigham, Treasurer; and R. A. McLean, Secretary. At the meetings, which will be held every Friday evening in the lecture room of the College, original papers will be read by the senior students. It is hoped that by the discussions raised upon these different subjects, by the reports of cases, and of the latest innovations in veterinary medicine, that not only will our knowledge of our adopted profession be materially increased,

but that a desire will be developed amongst us, thus early acquired, which will be retained during our professional career, to make original researches regarding the pathology of such of our diseases as are not yet fully understood.

Yours, respectfully,

R. A. McLEAN, *Secretary.*

EXCHANGES, BOOKS, JOURNALS, ETC., RECEIVED.

COMMUNICATIONS.—E. Maik, V.S. Wm Cutting, V.S. F. S. Billings. G. Penniman, D.V.S. J. C. McKenzie, V.S. L. Plageman, M.R.C.V.S. L. T. Bell, D.V.S. R. McLean. C. H. Stoeker, D.V.S. R. Wood, V.S.

BOOKS AND PAMPHLETS.—Transactions of the Department of Agriculture of Illinois; 1876—Vol. XIV. Annual Commencement Medical College of South Carolina. Die Kuhmilch und deren Prüfung, von Alois Koch.

JOURNALS.—Scientific American, Hospital Gazette, Medical Record, Country Gentleman, Turf, Field and Farm, National Live Stock Journal, New York Rural, American Agriculturist, Prairie Farmer, Practical Farmer, Maine Farmer. Journal de l'Agriculture, Recueil de Medecine Veterinaire, Clinica Veterinaria, Archives Veterinaires, Mouvement Medical, Revue fur Thierheilkunde und Thierzucht.

NEWSPAPERS.—Western Sportsman, Western Agriculturist, Our Dumb Animals, Vermont Record and Farm, The Ploughman, The Leader (Canada), The New England Farmer.